

Remarks

Claims 2, 4, 7, 8, 12, and 15-27 are now pending in this application. Applicant has amended claims 2, 23, 25 and 26 and presented new claim 27 to clarify the present invention. Applicant respectfully requests favorable reconsideration of this application.

The Examiner rejected claims 2, 7, 8, 15-17, 20, and 23-26 under 35 U.S.C. § 103(a) as being unpatentable over French patent 2,473,673 in view of U.S. patent 5,722,796 to Halvorsen et al. The Examiner rejected claims 4, 21, and 22 under 35 U.S.C. § 103(a) as being unpatentable over French patent 2,473,673. The Examiner rejected claim 20 under 35 U.S.C. § 103(a) as being unpatentable over French patent 2,473,673.

The combination of French patent 2,473,673 and Halvorsen et al. does not suggest the present invention as recited in claims 23 or 26 since, among other features, neither French patent 2,473,673 nor Halvorsen et al. suggests a projecting guide member that includes a plurality of projections each having an upper or lower edge that is radially sloped. French patent 2,473,673 suggests projections 18 having a horizontal upper edge. Halvorsen et al. does not suggest any such projections having a radially sloped upper or lower surface, in other words projections that are taller closer to the central axis as compared to farther away from the central axis and that correspond to the radially sloped truncated cone as recited in the claims. The radially sloped upper and lower edges recited in claims 23 and 26 correspond to the radially sloped surface of the truncated cone, thereby facilitating engagement and mating of the projecting and receiving guide members and, thereby, landing and connecting subsea equipment into a connecting

position with respect to a subsea oil and/or gas exploitation device.

The radially sloped upper or lower edge of the projections and the recesses that surround the projections as described below, the initial insertion of the projections into the corresponding recesses and then full insertion through the recesses makes it possible to achieve a smooth initial engagement and mating. The upper end portions of the projections suggested by French patent 2,473,673 do not serve to facilitate initial insertion. Actually, as shown in the drawings of French patent 2,473,673 , the mating connector 9 can not be further lowered once the projections have been engaged by the recesses.

Additionally, the combination of French patent 2,473,673 and Halvorsen et al. does not suggest the present invention as recited in claims 23 or 26 since, among other features, neither French patent 2,473,673 nor Halvorsen et al. suggests a receiving guide member including a plurality of recesses extending through the inner surface of the receiving structure and that engage and surround the corresponding projections of the projecting guide member. French patent 2,473,673 suggests a structure that includes slots 20 that are openings in the sides of the mating connector 9. Since the slots do not surround the projections 18, the projections 18 can easily be displaced out of engagement with respect to the slots. On the other hand, the openings recited in claims 23 and 26 surround the projections, thereby providing a more secure engagement and mating of the projecting and receiving guide members. Halvorsen et al. does not at all suggest any such openings or recesses through the inner surface of a truncated cone.

The radially sloped upper and lower surfaces of the projecting members and truncated

cone permit the present invention as recited in claims 23 and 26 to operate without guidelines.

On the other hand, Halvorsen et al. requires the use of guidelines. For example, the guide funnels 53 suggested by Halvorsen et al. are provided with guidewire tubes 55 through which the guidewires are passed and are arranged to receive guideposts 80, such as described in the present application on page 1, line 31, through page 2, line 17. French patent 2,473,673 requires manipulating arms 3a of a submarine to guide and attach a mating connector 9. In fact, one of the aims of the present invention is to get rid of the use of guidewires and guiding by means of manipulating arms, which also has no correspondence whatsoever in the present invention.

The Examiner asserts that French patent 2,473,673 does not suggest a cone that is wider than the projections where the projections extend throughout and vertically above the recess but that Halvorsen et al. shows a similar subsea connection device utilizing projections and recess openings to securely attach guided components and extending above the opening. However, this line of reasoning completely ignores the fact that French patent 2,473,673 suggests a hydraulic coupler with projections and slots in a mating connector and Halvorsen et al. suggests a production system that includes a guide post inserted in a guide funnel. Making the substitution suggested by the Examiner is contrary to the teachings of both references and would result in a non-functional structure. Also, as recited in the claims, the present invention provides a structure that guides subsea oil and gas exploitation equipment that is to be landed and connected to the device. Such equipment weights from 10 tons to up to 350 tons. On the other hand, the hydraulic coupling suggested by French patent 2,473,673 might weigh 40 kilos. The present invention as recited in claims 23 and 26 provides a structure that can handle the high impact loads in guiding, mating, landing and connecting such structures.

Thanks to the radially sloped upper and lower surfaces of the projecting members, which, among other things, facilitate the engagement and mating during the critical initial insertion stage, high impact loads can be handled. Further, it is not clear how Halvorsen et al. “shows a similar subsea connection device utilizing projections (guide posts 80) and recess openings (guide funnels 53) to securely attach guided components and extending above the opening”(emphasis added), because this actually refers to the whole production system of Halvorsen et al. with guide posts 80 and guide funnels 53 arranged in a one-to-one relationship, and obviously not anything claimed by the present invention. In addition, it also appears as if the Examiner is asserting that the guide post extends above the guide funnel. However, the Applicant can not definitely agree that the guide post extends throughout the guide funnel, i.e. from one side of the guide funnel, through the guide funnel, and out to the other side of the guide funnel. The Applicant also considers that “to securely attach guided components” on the production system is something quite different from the present invention, because this guiding is made by means of guidewires and guideposts.

Accordingly, in view of the above, it does not appear as if French patent 2,473,673 and Halvorsen et al. are combinable. An imaged combination of the two references would further be infeasible. Along these lines, if the "projections" 18 that appear to be slopingly attached against the inner surface 13 as illustrated in Fig. 2 of French patent 2,473,673 were exchanged with the vertically extending guide posts or "projections" suggested by Halvorsen et al., it appears as if the "truncated cone" 21 of the mating connector 9 must have a wider end extending further from the central axis than the projections for the guide posts "projections" to extend throughout and

vertically above the recesses 20. However, this definitely does not appear to improve the rigidity and stability of the connection. On the contrary, the connection would appear to be very poor and shaky. It seems to be of importance to the hydraulic coupler device suggested by French patent 2,473,673 that the surface of 21 matches with the corresponding surface of 13, i.e. they must have the same shape to achieve a sealed tight mating connection which has no correspondence whatsoever with the claimed invention, in contrast to the claimed invention that instead requires that each projection having a radially sloped upper edge and an inner surface defining a truncated cone that is radially sloped in a similar direction to the lower edges of the projections to achieve a smooth engagement and mating, and in addition is not at a sealed tight connection as for a hydraulic coupler. Furthermore, it does not appear as if the required windows 22 that serve for passage of locking fingers would fit into the combination of French patent 2,473,673 and Halvorsen et al.

In view of the above, the combination of French patent 2,473,673 and Halvorsen et al. does not suggest the present invention as recited in claims 23 or 26 or claims 2, 7, 8, 15-17, 20, 24 or 25, which depend thereon.

Additionally, in view of the above-discussed differences between French patent 2,473,673 and the present invention as recited in claim 23, French patent 2,473,673 also does not suggest the present invention as recited in claims 4, 21, and 22, which depend from claim 23. Whether or not the projections suggested by French patent 2,473,673 include a low friction material in general or the specific materials recited in claims 21 and 22, French patent 2,473,673 does not suggest a projecting guide member including a plurality of projections each having an

upper or lower edge that is radially sloped or a receiving guide member that includes a plurality of recesses that engage and surround each respective projection of the projecting guide member. Therefore, French patent 2,473,673 does not suggest the present invention as recited in claims 4, 21, and 22.

French patent 2,473,673 does not suggest the present invention as recited in claim 20 since, among other features, French patent 2,473,673 does not suggest the present invention as recited in claim 23, from which claim 20 depends. Additionally, French patent 2,473,673 does not suggest an oil and/or gas exploitation device, that is, a hydrocarbon production (or recovery) device. Therefore, one of ordinary skill in the art would not even look to French patent 2,473,673, which relates to a hydraulically operated tool/hydraulic multi-coupler device installed by a submarine to solve unrelated problems, such as supplying hydraulic power for repairing broken pipe lines, with an oil and/or gas exploitation device, and thus installation of oil and/or gas exploitation equipment. Thus, the technical field of French patent 2,473,673 is quite different from the present invention as recited in claim 23, from which claim 20 depends.

In view of the above, the references relied upon in the office action, whether considered alone or in combination, do not suggest patentable features of the present invention. Therefore, the references relied upon in the office action, whether considered alone or in combination, do not make the present invention obvious. Accordingly, Applicant submits that the present invention is patentable over the cited references and respectfully requests withdrawal of the rejections based on the cited references

In conclusion, Applicants respectfully request favorable reconsideration of this application and early issuance of the notice of allowance.

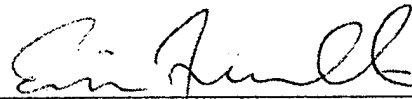
If an interview would advance the prosecution of this application, Applicant respectfully urges the Examiner to contact the undersigned at the telephone number listed below.

The undersigned authorizes the Commissioner to charge insufficient fees and credit overpayment associated with this communication to Deposit Account No. 22-0261.

Respectfully submitted,

Date:

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